

CLAIM AMENDMENTS

1. (Currently Amended) ~~A method for performing resource discovery in a network having multiple subnets and wherein inter-subnet discovery agents installed on nodes within the multiple subnets support inter-subnet resource discovery, the method comprising:~~

performing resource discovery in a network having multiple subnets wherein each of the multiple subnets comprising one or more inter-subnet discovery agents installed on nodes within the multiple subnets, the resource discovery comprising:

designating, within a first subnet, a first inter-subnet discovery agent on a first node as an active discovery agent, wherein the designating comprises automatically selecting, as the active discovery agent, the first inter-subnet discovery agent from a set of installed discovery agents in the first subnet according to a criterion;

discovering, by the first inter-subnet discovery agent, active discovery agents on neighboring subnets in the network; and

propagating, by the first node containing the active discovery agent, an inter-subnet resource discovery search request to the active discovery agents on neighboring subnets.

2. (Original) The method of claim 1 wherein the resource discovery search request is a network device discovery request.

3. (Original) The method of claim 2 wherein the network device discovery request is a request to identify printers in the network.

4. (Original) The method of claim 1 wherein the discovering step includes:

receiving, by the first node containing the first active discovery agent, from a second node containing an active discovery agent on a neighboring subnet, information comprising a network address of the second node containing the active discovery agent; and

storing, by the first node, the information in a list identifying neighboring active discovery agents.

5. (Original) The method of claim 4 further comprising the steps of:

receiving, by the first node containing the active discovery agent, a request to provide discovery information for a discoverable resource and in response performing, during the propagating step, the sub-steps of:

passing the request to the active discovery agent on the first node;

searching, by the active discovery agent on the first node, the list of neighboring active discovery agents; and

issuing, by the first node, a search request identifying a resource discovery requester to at least one neighboring active discovery agent in the list identifying neighboring active discovery agents.

6. (Original) The method of claim 5 further comprising the step of:

transmitting, by the first node containing the active discovery agent, to the resource discovery requester a response including resource discovery information corresponding to the discoverable resource.

7. (Previously Presented) The method of claim 4 further comprising:
publishing, by at least one node, address information for neighboring active
discovery agents into a network directory service.

8. (Previously Presented) The method of claim 1 wherein at least one node
comprises a set of device discovery agents, further comprising the step of:

determining, by the set of device discovery agents, discovery information for
discoverable resources present on the subnet.

9. (Canceled)

10. (Canceled)

11. (Currently Amended) A computer-readable medium having computer-
executable instructions for ~~facilitating performing resource discovery in a network~~
~~having multiple subnets and wherein inter-subnet discovery agents installed on nodes~~
~~within the multiple subnets support inter-subnet resource discovery, the computer-~~
~~readable medium having computer-executable instructions facilitating performing the~~
steps of:

performing resource discovery in a network having multiple subnets wherein
each of the multiple subnets comprises a plurality of simple discovery agents (SDAs)
installed on nodes within each of the multiple subnets, the resource discovery
comprising:

~~designating, within a one of the plurality of SDAs installed on a first node within a first subnet of the multiple subnets, a first inter-subnet discovery agent on a first node as [[an]] a first active simple discovery agent (ASDA);~~

~~discovering, by the first ASDA, first inter-subnet discovery agent, active discovery agents a second ASDA on neighboring subnets a second subnet in the network, wherein the discovering comprises:~~

~~receiving a network address and ASDA status of a node containing the second ASDA via a communication from the second ASDA to the first ASDA; and~~

~~storing, by the first ASDA, the network address and ASDA status of the second ASDA in a list, the list comprising network addresses and ASDA statuses corresponding to at least one other ASDA on at least one other subnet;~~

~~receiving, by the first ASDA, a request from a resource discovery requester to provide discovery information for a discoverable resource; [[and]]~~

~~responsive to the request, propagating, by the first ASDA, node containing the active discovery agent, an inter-subnet resource discovery search request to the second ASDA and active discovery agents to one or more ASDAs on one or more other neighboring subnets, the propagating comprising:~~

~~searching the list comprising network addresses and ASDA statuses of ASDAs on other subnets; and~~

~~issuing a search request identifying the resource discovery requester to an ASDA included in the list; and~~

transmitting, by the first ASDA to the resource discovery requester a response including resource discovery information corresponding to the discoverable resource.

12. (Original) The computer-readable medium of claim 11 wherein the resource discovery search request is a network device discovery request.

13. (Original) The computer-readable medium of claim 12 wherein the network device discovery request is a request to identify printers in the network.

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Currently Amended) The computer-readable medium of ~~claim 14~~ claim 11 further comprising:

publishing, by at least one ASDA node, address information for neighboring active discovery agents into a network directory service.

18. (Currently Amended) The computer-readable medium of claim 11 ~~wherein at least one node comprises a set of device discovery agents~~, further comprising the step of:

determining, by the plurality of SDAs ~~set of device discovery agents~~, discovery information for one or more discoverable resources present on the same subnet as the SDAs.

19. (Currently Amended) The computer-readable medium of claim 11 wherein the designating step comprises:

automatically selecting, as the ASDA, a one of the plurality of SDAs ~~active discovery agent~~, ~~the first inter-subnet discovery agent from a set of installed discovery agents~~ in the first subnet according to a criterion.

20. (Currently Amended) The computer-readable medium of claim 11 wherein the designating step comprises:

manually selecting, as the ~~active discovery agent~~ ASDA, a one of the plurality of SDAs, ~~the first inter-subnet discovery agent from a set of installed discovery agents~~ in the first subnet.

21. (Currently Amended) A resource discovery framework for resource discovery embodied in a computer-readable medium ~~in a network including multiple subnets and discoverable networked resources~~, the framework comprising:

an active discovery agent ~~designated for ones~~ within a one of ~~[[the]]~~ multiple subnets within a network, the active discovery agent configured to identify and to communicate with other ~~for identifying~~ active discovery agents on neighboring subnets within the network, wherein each subnet comprises a plurality of discovery agents which, if selected, will function as the active discovery agent;

a selection mechanism for designating one of the discovery agents as the active discovery agent within each subnet; and

a request propagation mechanism by which nodes containing the active discovery agents receive resource discovery requests from other nodes within the same subnet and propagate an inter-subnet resource discovery search request to nodes containing active discovery agents on neighboring subnets.

22. (Currently Amended) The resource discovery framework of claim 21 wherein a list is maintained by each active discovery agent in each subnet in the network, the list identifying the active discovery agent agents for neighboring subnets.

23. (Currently Amended) The resource discovery framework of claim 22, further including:

a directory service in communication with the active discovery agents in the network, the directory service including information corresponding to the lists maintained by all the active discovery agents in the network.

24. (Currently Amended) A system for automating network-wide resource discovery in ~~networks~~ a network having multiple subnets, the system comprising:

a set of ~~inter-subnet~~ local discovery agents installed on nodes within each of the multiple subnets within the network, the set of local discovery agents configured to implement resource discovery requests within a subnet according to a local discovery protocol support inter-subnet resource discovery; and

a first inter-subnet discovery agent on a first node designated as an active discovery agent, the first inter-subnet discovery agent including procedures for facilitating:

discovering and communicating with other active discovery agents on neighboring subnets in the network according to a network protocol; and

propagating an inter-subnet resource discovery search request including the network address of the requesting resource via a unicast message to the active discovery agents on neighboring subnets.

25. (Original) The system of claim 24 wherein the resource discovery search request is a network device discovery request.

26. (Original) The system of claim 25 wherein the network device discovery request is a request to identify printers in the network.

27. (Original) The system of claim 24 wherein the procedure for discovering active discovery agents facilitates:

receiving, by the first node containing the first active discovery agent, from a second node containing an active discovery agent on a neighboring subnet, information comprising a network address of the second node containing the active discovery agent; and

storing, by the first node, the information in a list identifying neighboring active discovery agents.

28. (Original) The system of claim 27 wherein the first inter-subnet discovery agent includes procedures that facilitate, in response to receiving a request to provide discovery information for a discoverable resource, generating a response by:

searching the list of neighboring active discovery agents; and

issuing a search request identifying a resource discovery requester to at least one neighboring active discovery agent in the list identifying neighboring active discovery agents.

29. (Previously Presented) The system of claim 28 wherein the first inter-subnet discovery agent includes procedures that facilitate:

transmitting, by the first node, to the resource discovery requester a response including resource discovery information corresponding to the discoverable resource.

30. (Original) The system of claim 27 wherein the first node further comprises procedures facilitating publishing address information for neighboring active discovery agents, obtained by the first inter-subnet discovery agent, into a network directory service.

31. (Original) The system of claim 24 wherein the first node comprises a set of device discovery agents for determining discovery information for discoverable resources present on the subnet.

32. (New) The method of claim 1 wherein the criterion comprises at least one of operating system version, primary (physical) memory size, or central processing unit (CPU) speed.

33. (New) The computer-readable medium of claim 19 wherein the criterion comprises at least one of operating system version, primary (physical) memory size, or central processing unit (CPU) speed.

34. (New) The system of claim 24 wherein the local discovery protocol comprises one of universal plug and play (UPnP) or simple-location-protocol (SLP).

35. (New) The system of claim 24 wherein the network discovery protocol comprises transmission control protocol/Internet protocol (TCP/IP).